

REMARKS

Reconsideration of the subject application, as amended, is hereby respectfully requested. In this Amendment, claims 26, 34, and 35 have been amended and claims 32 and 33 have been cancelled. Support for the claim amendments can be found in the originally filed specification, for example, at Figures 6B and paragraphs 45 and 46 and, as such, no new matter has been added to the claims.

Claim Objections

The Examiner has objected to claim 35 the status identifier is missing. Applicants have added the status identifier accordingly.

Drawings

Figures 1a-1c, 2a and 2b have been amended to include the designation of "Prior Art" and are attached to this response. Applicants, accordingly, respectfully request withdrawal of the objections to Figures 1a-1c, 2a, and 2b.

35 U.S.C. §102 Rejections

Amended claim 26 is not anticipated by Charles et al., (U.S. Patent No.: 6,271,671, hereinafter "Charles") at least because Charles fails to disclose means for providing an electrical signal having multiple phases to at least one conductor of a test structure and a processor for generating a first image of the test structure during a first phase of the electrical signal based on detection signals received from the detector, generating a second image of the test structure during a second phase of the electrical signal based on detection signals received from the detector, and processing the first and second images to locate a defect in the test structure.

Charles et al., (U.S. Patent No.: 6,271,671, hereinafter "Charles") is directed to an improvement in multi-chip module (MCM) testability by using a new technique to detect on-substrate electric field strength. *Charles*, Abstract. "The electrical, mechanical and optical properties of the electro-optical

dielectric layers are determined to investigate the effect of the poling and processing operations on the efficacy of the polyimide as both a dielectric layer and an electro-optic material suitable for laser probing.” *Id.*, Abstract.

Charles describes a process wherein a dielectric interlayer “in a multi-level thin film is converted into an electro-optic material by poling the device in a strong electric field. The change in the electro-optic coefficients of the chromophore-doped polyimide in the presence of electrical signals in the circuit can be detected using a laser beam. The electro-optic interaction between the poled dielectric and the laser beam allows the strength of the internal fields within the MCM to be determined as a function of position.” *Id.*, column 1, lines 20-33. Thus, Charles discloses a process of determining the strength of an internal field within an MCM as a function of position. However, Charles does not disclose providing an electrical signal having multiple phases, generating a first and second image of the test structure during a first and second phase of the electrical signal, respectively, and processing the first and second images to locate a defect in the test structure as required by amended claim 26.

The Product Description of a Lock In Amplifier, (Perkin Elmer Technical Note, 2000, hereinafter “Perkin”) is cited for providing a lock-in amplifier that provides an electrical signal that is both an AC and a DC current. However, even if true, Perkin fails to disclose or suggest providing an electrical signal having multiple phases, generating a first and second image of the test structure during a first and second phase of the electrical signal, respectively, and processing the first and second images to locate a defect in the test structure as required by amended claim 26. Hence, Perkin fails to overcome the above noted deficiencies of Charles.

Alumot et al. U.S. Patent No: 5,699,447, hereinafter “Alumot”) is cited for providing the inspection of a surface of chips and wafers for defects that includes a first and second phase of scanning the surface with a laser.

Alumot discloses a dual-phase approach for inspecting the surface of an article like a wafer or chip. *Alumot*, Abstract. The first phase includes optically examining the complete surface of the article by scanning its complete surface at a relatively high speed. *Id.* The second phase includes optically examining specific locations of the article where defects are suspected with a relatively high special

resolution. *Id.* As such, the two-phase approach of Alumot refers to a first, relatively low-resolution optical examination of an article and a second, relatively high-resolution optical examination of a specific location of the article. Thus two-phase resolution of optical examination disclosed in Alumot refers to two phases of optical resolution for the inspection of an article and is in no way analogous to the system of claim 26 which is adapted to provide an electrical signal having multiple phases, generate a first image of the test structure during a first phase of the electrical signal, and generate a second image of the test structure during a second phase of the electrical signal. Hence, Alumot fails overcome the above noted deficiencies of Charles and Perkin.

Thus, for at least these reasons, claim 26 and its dependent claims, are neither anticipated by Charles nor rendered obvious by the combination of Charles, Perkin, and Alumot.

Applicants, accordingly, respectfully request withdrawal of the rejections under 35 U.S.C. § 102.

35 U.S.C. § 103 Rejections

Claims 29-33 have been cancelled thus rendering Examiner's rejection of these claims moot.

Claim 35 depends from claim 26 and is patentable over Charles and Perkin for at least the reasons provided above with regard to claim 26. EG&G Princeton Applied Research Product Description ("Explore the Lock-in Amplifier, 1983, hereinafter "Princeton") is cited for providing a lock-in amplifier with a frequency range limited to 0.1 Hz and 200 kHz. However, even if true, Princeton fails to teach or suggest providing an electrical signal having multiple phases, generating a first and second image of the test structure during a first and second phase of the electrical signal, respectively, and processing the first and second images to locate a defect in the test structure as required by claim 35. Hence, Princeton fails to overcome the above noted deficiencies of Charles, Perkin, and Alumot. Therefore, for at least these reasons, neither Charles, Perkin, Alumot, nor Princeton, whether considered alone, or in combination, teach or suggest each and every element of claim 35. Thus, claim 35 is patentable over the cited prior art.

Claims 34 and 36 depend from claim 26 and are patentable over Charles, Perkin, and Alumot for at least the reasons provided above with regard to claim 26.

Applicants, accordingly, respectfully request withdrawal of the rejections under 35 U.S.C. § 103.

Applicants respectfully submit that the present application is in condition for allowance. If the Examiner believes a telephone conference would expedite or assist in the allowance of the present application, the Examiner is invited to call the undersigned attorney at (650) 798-0300.

Please charge any shortages and credit any overages to Deposit Account No. 19-3140. Any necessary extension of time for response not already requested is hereby requested. Please charge any corresponding fee to Deposit Account No. 19-3140.

Respectfully submitted,
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